



1. USE COATED DEFORMED BILLET REINFORCING STEEL BARS CONFORMING TO AASHTO M 284 OR M 111 AND M 31, GRADE 60 RESPECTIVELY.
2. USE TYPE II CEMENT (LOW ALKALI).
3. PROVIDE $\frac{3}{4}$ " CHAMFER ON ALL EXPOSED CONCRETE CORNERS EXCEPT WHERE NOTED OTHERWISE.
4. USE CONCRETE CLASS AA(AE).
5. PROVIDE MINIMUM 2" COVER FOR ALL REINFORCING STEEL.
6. FOR CURB AND GUTTER APPLICATIONS SEE STD DWG CB 1 AND CB 2 FOR BOX ELEVATIONS. INCLUDE CONCRETE QUANTITIES FOR CURB AND GUTTER IN ROADWAY QUANTITIES.
7. FOR MANHOLE STEPS SEE STD DWG GF 6.
8. USE 8" LONG, # 4 DOWEL BARS @ 8" O.C. MAX. OR EXTEND BOX REBARS 4" INTO THE CURB AND GUTTER, TO ATTACH CURB AND GUTTER TO THE BOX.
9. WHEN USING THE BOX AS AN INLET, SET EDGES OF THE BOX TO MATCH PAVEMENT FINISH GRADE AROUND BOX PERIMETER. SET TOP OF BOX SURFACE TO MATCH PAVEMENT CROSS AND LONGITUDINAL SLOPES. RESET ANY BOXES WHERE BOX SURFACE OR GRATE AND FRAME IS NOT FLUSH WITH PAVEMENT. DO NOT EXCEED $\frac{1}{4}$ " GRATE DEPRESSION.
10. CENTER PIPE IN BOX OPENING, USE NO-SHRINK GROUT TO SEAL OPENING AROUND THE PIPE, OR USE PIPE MANUFACTURER PIPE-BOOT INSTEAD.

HS 20 OR INTERSTATE ALTERNATE LOADING IN ACCORDANCE
WITH AASHTO 17th EDITION SPECIFICATIONS.

STRUCTURAL STEEL: $F_y = 36,000 \text{ psi}$
STRUCTURAL CONCRETE: $f'_c = 4,000 \text{ psi}$
 $f_y = 60,000 \text{ psi}$
 $n = 8$

(FOR DESIGN INFORMATION ONLY)

USE THE FOLLOWING EQUATIONS FOR CALCULATING
VOLUME OF CONCRETE AND WEIGHT OF STEEL:
(ENTER ALL DIMENSIONS IN FEET)

BOX WIDTHS OF 4' TO 8' & DEPTHS OF 4' TO 12'

$$\text{CONCRETE VOLUME (CU YDS)} = (0.037 * \text{WIDTH} + 0.1853) * \text{DEPTH} + (0.2161 * \text{WIDTH} - 0.2811)$$

TO CALCULATE VOLUME OF CONCRETE OF PIPE HOLES
 VOLUME OF HOLES (CU YDS) = 0.0083 * (PIPE DIAMETER) - 0.0929

BOX WIDTHS OF 4' UP TO 8' & DEPTHS OF 4' TO 12'

$$\text{REBAR WEIGHT (LBS)} = (4.101 * \text{WIDTH} + 19.869) * \text{DEPTH} + (19.742 * \text{WIDTH} + 15.267)$$



SECTION B-B

CATCH BASIN / CLEANOUT BOX

GRATE AND FRAME APPLICATION

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

STANDARD CATCH BASIN AND CLEANOUT BOX

STD DWG
CB 5A

STANDARD DRAWING TITLE

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE COUNTY, UTAH
RECOMMENDED FOR APPROVAL
CHAIRMAN STANDARDS COMMITTEE
APPROVED
DEPUTY DIRECTOR
JUN.30.2005
DATE
JUN.30.2005
DATE